Motors and Generators: 2001

Issued September 2002

MA335H(01)-1

Current Industrial Reports

Current data are released electronically on Internet for all individual surveys as they become available. Use: http://www.census.gov/mcd/. Individual reports can be accessed by choosing "Current Industrial Reports (CIR)," clicking on "CIRs by Subsector;" then choose the survey of interest. Follow the menu to view the PDF file or to download the worksheet file (WK format) to your personal computer.

These data are also available on Internet through the U.S. Department of Commerce and STAT-USA by subscription. The Internet address is: www.stat-usa.gov/. Follow the prompts to register. Also, you may call 202-482-1986 or 1-800-STAT-USA, for further information.

SUMMARY OF FINDINGS

During 2001, the total value of shipments of motors and generators, including interplant transfers, totaled $9.9 billion, down 6.3 percent from the revised 2000 value of $10.7 billion. The 2001 data for individual categories of motors and generators exhibited the following changes: The value of shipments of fractional horsepower motors decreased 14.0 percent, from the revised value of $4.3 billion in 2000 to $3.7 billion in 2001. The integral horsepower motors and generators decreased 11.1 percent from the revised value of $1.7 billion in 2000, to $1.5 billion in 2001. The value of land transportation motors and generators was combined with parts for motors and generators to avoid disclosing data for individual companies. The value of shipments of prime mover generator sets increased 5.1 percent, from the revised value of $2.8 billion in 2000 to $3.0 billion in 2001. Electric motor generator sets decreased 5.8 percent from the value of $1.0 billion in 2000 to $968.4 million in 2001.

For general CIR information, explanation of general terms and historical note, see the appendix.

Address inquiries concerning these data to Investment Goods Industries Branch, Manufacturing and Construction Division (MCD), Washington, DC 20233-6900, or call Tempie Whittington, 301-457-4800.

For mail or fax copies of this publication, please contact the Information Services Center, MCD, Washington, DC 20233-6900, or call 301-457-4673.

U S C E N S U S B U R E A U

Helping You Make Informed Decisions

U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU

Table 1. Value of Shipments of Motors and Generators by Product Class: 1997 to 2001
[Millions of dollars]

Product code	Product description	2001		2000	1999	1998	1997
335312	Motors and generators	9,991.6	r/	10,661.5	12,312.4	12,180.9	10,545.8
3353121	Fractional horsepower motors, excluding hermetics	3,723.0	r/	4,328.1	4,764.0	4,683.5	4,715.6
3353123	Integral horsepower motors and generators, other than for land transportation equipment	1,508.3		1,695.7	1,802.7	1,981.6	2,246.0
3353125	Land transportation motors, generators, and control equipment 1/	(D)		(D)	(D)	(D)	(D)
3353127	Prime mover generator sets (except steam or hydraulic turbine)	2,968.9	r/	2,825.1	3,107.3	2,811.8	1,734.8
3353129, 12A	Electric motor-driven generator sets	968.4		1,028.1	1,676.8	1,598.2	954.7
335312C	Parts for motors and generators 1/	823.1	r/	784.4	961.6	1,105.7	894.8

D Withheld to avoid disclosing data for individual companies. r/Revised by 5 percent or more from previously published data.

1/Product code 3353125 is combined with product code 335312C to avoid disclosing data for individual companies.

Table 2. Quantity and Value of Shipments of Motors and Generators: 2001 and 2000
[Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2001 Quantity		2001 Value		2000 Quantity		2000 Value	
335312	Motors and Generators	(NA)	(X)		9,991,573		(X)	r/	10,661,477	
3353121	Fractional horsepower, excluding hermetics and other rotating equipment	(NA)	227,403,951		3,723,007	r/	252,858,601	r/	4,328,127	
3353121001	Used in automobile accessories (such as heaters, convertible tops, automatic windows, etc., excluding starter motors and generators), including ac and dc	11	91,013,664		982,375	r/	96,854,803	r/	1,216,437	
	Used in aircraft and spacecraft, excluding generators:									
3353121004	Ac	14	a/ 96,542	b/	36,968	a/	87,656	b/	33,581	
3353121007	Dc	17	a/ 349,916	b/	61,883	a/	446,267	b/	63,610	
3353121011	Used in toys (all sizes) and clock type synch and subsynch timing, ac and dc	5	a/ 8,962,751	a/	51,193	r/	8,368,309		52,410	
	All other uses:									
	Ac (noncommutated)	(NA)	98,516,803		1,744,660		109,164,571	r/	1,932,389	
	Single phase or polyphase:									
33531210X2, 0X3	Less than 746 watts, under 1 hp (three-digit FS) 1/	(NA)	48,613		10,757		66,776		10,974	
	Single phase:									
3353121012	Skeleton type shaded pole (use diameter at widest part)	12	11,585,909		77,052	a/	18,877,076	a/	118,505	
	Conventional type shaded pole	(NA)	36,972,342		358,727		44,271,671		416,717	
3353121019	Less than 2.5-inch diameter	12	(D)		(D)		(D)		(D)	
	2.5- to less than 3.75-inch diameter:									
3353121022	2 pole	12	6,587,363		113,587	r/	7,674,418	r/	137,830	
3353121026	4 pole and over	7	b/ 1,320,108	b/	108,340	b/	13,956,367	b/	117,102	
3353121031	3.75- to less than 4.375-inch diameter	3	(D)		(D)		(D)		(D)	
3353121033	4.375-inch diameter and over	5	(S)	b/	36,377	a/	4,760,660	a/	42,483	
	Permanent split capacitor	(NA)	19,420,406		436,013		19,579,928		425,745	
	Less than 3.75-inch diameter:									
3353121045	2 pole	8	2,152,758		43,664		(S)		45,173	
3353121048	4 pole and over	11	2,559,671		42,651		2,275,623		32,547	
3353121051	3.75- to less than 4.375-inch diameter	10	(D)		(D)		(D)		(D)	
	4.375 to less than 5.375 diameter:									
3353121062	2 pole and 4 pole	12	a/ 1,337,783	b/	26,602		2,097,824		34,432	
3353121067	6 pole and over	4	b/ 422,083	b/	10,278	b/	480,264	b/	12,302	
	5.375-inch diameter and over:									
3353121072	Less than 746 watts, under 1 hp (two-digit FS)	17	c/ 5,405,470	c/	224,035	c/r/	5,037,366	b/r/	218,346	
3353123005	746 watts and over, 1 hp and over (two-digit FS) 2/	6	(D)		(D)		(D)		(D)	
	Capacitor start	(NA)	2,024,679		151,707	r/	2,043,525	r/	144,927	
3353121081	Less than 4.375-inch diameter	5	c/ 24,803	c/	2,028	a/	14,797		1,264	
3353121082	4.375- to less than 5.375-inch diameter	9	c/ 104,044	c/	8,414	c/	130,568		7,073	
	5.375-inch diameter and over:									
3353121086	Less than 746 watts, under 1 hp (two-digit FS)	13	a/ 1,446,387	a/	100,653	a/r/	1,600,597	a/r/	108,240	
3353123013	746 watts and over, 1 hp and over (two-digit FS) 2/	7	(D)		(D)		(D)		(D)	
	Split phase		(D)		(D)		(D)		(D)	
3353121092	Less than 746 watts, under 1 hp (two-digit FS)	14	(D)		(D)		(D)		(D)	
3353123023	746 watts and over, 1 hp and over (two-digit FS) 2/	5	(D)		(D)		(D)		(D)	
	All other single phase		(D)		(D)		(D)		(D)	
3353121095	Less than 746 watts, under 1 hp (two-digit FS)	6	(D)		(D)		(D)		(D)	
3353123027	746 watts and over, 1 hp and over (two-digit FS) 2/	4	(D)		(D)		(D)		(D)	
	Polyphase (servo and nonservo)	(NA)	2,778,178		251,027		3,281,831	r/	294,128	
33531210B1	Synchronous stepper motors	7	(D)		(D)		(D)		(D)	
	All other polyphase:									
3353121098	Less than 746 watts, under 1 hp (two-digit FS)	11	1,321,127		123,817		1,492,052	r/	149,289	
3353123029	746 watts and over, 1 hp and over (two-digit FS)	10	(D)		(D)		(D)		(D)	

Continued

Table 2. Quantity and Value of Shipments of Motors and Generators: 2001 and 2000
[Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2001 Quantity		2001 Value		2000 Quantity		2000 Value	
	Ac (commutated)	(NA)	18,388,605		315,055	r/	24,655,965		350,440	
	Mechanically commutated (brushes, for example):									
	Cased or sleeved:									
33531210C7	Less than 2.875-inch diameter	15	6,808,868		65,099	r/	8,371,974	r/	91,744	
33531210E1	2.875- to less than 3.188-inch diameter	10	3,679,569	a/	50,040	a/	3,368,753		49,828	
33531210E4	3.188- to less than 3.563-inch diameter	10	621,710	a/ b/	12,937	a/	261,577		15,696	
	3.563 inch diameter and over:									
33531210E7	Less than 746 watts, under 1 hp (two-digit FS)	8	182,670		22,410		231,096		28,074	
3353123034	746 watts and over, 1 hp and over (two-digit FS)	9	58,006	b/ c/	65,679	a/	66,064		39,921	
	Uncased:									
33531210G5	Less than 746 watts, under 1 hp (two-digit FS)	10	(D)		(D)		(D)		(D)	
3353123038	746 watts and over, 1 hp and over (two-digit FS)	4	(D)		(D)		(D)		(D)	
	Dc or universal motors by case size	(NA)	10,075,670		530,873	r/	13,281,030		679,260	
	Permanent magnet (brushless):									
	Servo:									
33531210G7	Less than 4-inch diameter	20	2,530,910	b/	107,584	r/	2,807,191	a/r/	104,749	
33531210H1	4-inch diameter and over	13	76,335		26,680	a/	96,790	b/	46,203	
	Nonservo:									
33531210H4	Less than 4-inch diameter	21	5,042,911		148,188		6,277,518	r/	178,276	
33531210H7	4-inch diameter and over	17	549,857		81,005		574,113		84,263	
33531210J1	Wound field	8	95,155	c/ b/	10,303	c/	104,510	b/	10,966	
33531210J4	Electronically commutated	9	573,133	c/	42,063		2,036,381	c/	130,451	
	All other:									
33531210J7	Servo	12	1,153,592	a/ b/	101,656	r/	1,326,541	b/r/	110,530	
33531210K1	Nonservo	5	53,777		13,394	b/	57,986	b/	13,822	
3353123	Integral horsepower, excluding hermetics and other rotating equipment	(NA)	5,908,392		1,508,327		6,479,957		1,695,732	
3353123001	Used in aircraft and spacecraft, excluding generators	(NA)	(D)		(D)		(D)		(D)	
	All other uses:									
	Ac (noncommutated):	(NA)	2,004,553		1,042,845		2,467,788		1,202,393	
	Motors:									
	Single phase	(NA)	278,738		60,261		365,905		75,814	
33531210K4	Less than 746 watts, under 1 hp (three-digit FS) 1/	4	(D)		(D)		(D)		(D)	
3353123041	746 watts and over, 1 hp and over 2/	14	(D)		(D)		(D)		(D)	
33531230X4	746 watts and over, 1 hp and over 2/	(NA)	949,518		119,388		843,273		120,296	
	Polyphase induction, excluding synchronous	(NA)	1,725,815	b/	982,584	b/	2,101,883		1,126,579	
	All motors, including energy efficient (EE):									
33531210K7	Less than 0.746 watts, less than 1 hp (three-digit FS) 1/	10	(D)		(D)		(D)		(D)	
3353123043	0.746 to 3.371 kW, 1 through 5 hp	25	968,959	b/	154,308	b/	1,201,954	a/	198,288	
3353123046	3.731 to less than 14.921 kW, greater than 5 through 20 hp	27	497,496		175,767		602,452		216,237	
3353123049	14.921 to less than 37.301 kW, greater than 20 through 50 hp	23	145,667	a/	133,655		170,049		152,945	
3353123052	37.301 to less than 74.601 kW, greater than 50 through 100 hp	22	48,948	a/	101,576		53,594		113,897	
3353123055	74.601 to less than 149.201 kW, greater than 100 through 200 hp	22	24,021	a/	94,950		26,224		107,339	
3353123058	149.201 to less than 373.001 kW, greater than 200 through 500 hp	22	15,338	b/	162,657	a/	15,695		164,506	
3353123061	373.001 to less than 746.001 kW, greater than 500 through 1,000 hp	11	2,185	b/ a/	54,756	b/	2,552		54,256	
3353123064	746.001 to less than 1,865.001 kW, greater than 1,000 through 2,500 hp	7	(D)		(D)		(D)		(D)	
3353123067	1,865.001 kW and over, greater than 2,500 hp	5	(D)		(D)		(D)		(D)	

Continued

Table 2. Quantity and Value of Shipments of Motors and Generators: 2001 and 2000
[Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2001 Quantity		2001 Value		2000 Quantity		2000 Value	
	Energy efficient motors, included in product codes 3353123043 to 3353123055	(NA)	411,963		247,611		595,944		325,401	
33531230E1	0.746 to 3.371 kW, 1 through 5 hp	12	130,876	a/	23,578		242,900		49,810	
33531230E3	3.731 to less than 14.921 kW, greater than 5 through 20 hp	11	167,250	a/	50,181	a/	224,353		74,300	
33531230E5	14.921 to less than 37.301 kW, greater than 20 through 50 hp	12	71,630		61,906		82,222		70,146	
33531230E7	37.301 to less than 74.601 kW, greater than 50 through 100 hp	13	25,465	a/	51,667		28,939		61,054	
33531230E9	74.601 to less than 149.201 kW, greater than 100 through 200 hp	13	16,742	a/	60,279		17,530		70,091	
3353123085	Synchronous (servo and nonservo)	8	(S)	a/	12,602		(S)	r/	18,878	
	Ac generators (for internal combustion engines	(NA)	(S)	a/	289,704		(S)	r/	290,738	
3353123089	Less than 15 kVA	10	19,128	a/	18,818	a/	30,445	a/	23,594	
3353123098	15 to less than 375 kVA	8	(S)	b/	57,052		(S)	a/	65,117	
33531230A1	375 to less than 750 kVa	5	7,712	c/	39,610		9,469		46,718	
33531230A4	750 kVa and over	4	(S)	c/	174,224		(S)	c/	155,309	
	Dc motors and generators, excluding all arc welding and battery charging generators for internal combustion engines	(NA)	(S)		163,176		(S)		179,576	
33531230A7	0.746 to less than 3.375 kW, 1 through 5 hp	12	(S)		119,503		(S)		132,195	
33531230B1	3.375 to less than 74.601 kW, 5 through 100 hp	8	5,600		28,038		7,486		31,258	
33531230B4	74.601 kW and over, greater than 100 hp	6	881		15,635		1,265		16,123	
3353125	Motors and generators for land transportation, including those used in associated control equipment 3/	9	(D)		(D)		(D)		(D)	
3353127	Prime mover generator sets (except steam or hydraulic turbine and electric motor-driven generator sets)	(NA)	(S)		2,968,688		(S)	b/r/	2,825,142	
	Gas/gasoline engine-driven generator sets, ac and dc output	(NA)	(S)		675,552		(S)		659,357	
3353127003	Less than 5 kW	14	(S)	b/	85,895	b/	190,893	b/	73,316	
3353127007	5 to less than 15 kW	19	(D)		(D)		(D)		(D)	
3353127011	15 to less than 50 kW	14	9,186	c/	70,410	c/r/	8,789	c/r/	63,878	
3353127013	50 to less than 100 kW	11	3,007	c/	42,307	b/r/	3,036	c/r/	43,081	
3353127017	100 kW and over	8	(D)		(D)		(D)		(D)	
	Diesel engine-driven generator sets, ac and dc output	(NA)	76,690		1,916,208	r/	71,060		1,883,180	
3353127025	Under 15 kVA	13	19,059	c/	113,927	c/	16,705	b/	102,141	
3353127028	15 to less than 50 kVA	21	17,994	c/	159,932	c/r/	15,941	c/r/	139,495	
3353127031	50 to less than 100 kVA	18	11,710	c/	122,398	c/	11,026	a/	122,370	
3353127034	100 to less than 200 kVA	16	6,956	c/	123,390	a/	6,423	b/	126,365	
3353127037	200 to less than 400 kVA	15	(D)		(D)		(D)		(D)	
3353127041	400 to less than 600 kVA	11	(D)		(D)		(D)		(D)	
3353127043	600 to less than 800 kVA	10	3,299	b/	205,599		3,015	a/	204,257	
3353127046	800 to less than 1,000 kVA	9	(D)		(D)		(D)		(D)	
3353127049	1,000 to less than 2,000 kVA	8	(D)		(D)		(D)		(D)	
3353127051	2,000 kW and over	5	167	b/	70,309		173		81,462	
9993336110	Gas turbine-driven generator sets (all sizes)	7	(S)		(S)		(S)		(S)	
3353127065	Other generator set units, including dual fuel oil and gas) engine-driven generator sets and ac/dc output, excluding electric motor-driven generator sets	3	(D)		(D)		(D)		(D)	
3353129, 12A	Electric motor-driven generator sets	(NA)	(S)	b/	968,414		(S)		1,028,098	
	Electric motor-driven generator sets, including dynamotors, converters, inverters, and frequency changers:									
3353129003	Less than 746 watts ac and dc output rating	7	(S)		12,655		47,921		8,728	
335312A003	746 watts or more ac and dc output rating	10	3,194	b/	14,470	a/	3,847	c/	15,724	
	All hermetic motors:		(S)		697,590		(S)		786,724	
3353129011	5.5-inch stator core diameters and smaller	7	(D)		(D)		(D)		(D)	
335312A011	Over 5.5-inch stator core diameters	10	(D)		(D)		(D)		(D)	
	All other rotating equipment, including rate generators, resolvers, and synchro-type components	(NA)	769,531		243,699	r/	765,218		216,922	

Continued

Table 2. Quantity and Value of Shipments of Motors and Generators: 2001 and 2000
[Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2001 Quantity	2001 Value	2000 Quantity	2000 Value
3353129014	Rated at less than 746 watts	14	(S) a/	201,059	(S) a/	187,236
335312A014	Rated at 746 watts or more	11	(S) a/	42,640	(S) a/	29,686
335312C	Parts for motors and generators regardless of of output rating 3/	(NA)	(X)	823,137	(X) r/	784,378
335312C001	Commutators	9	(X)	(D)	(X)	(D)
335312C004	Land transportation	2	(X)	(D)	(X)	(D)
335312C007	All other parts	71	(X)	(D)	(X)	(D)

- Represents zero. D Withheld to avoid disclosing data for individual companies. FS Frame size. NA Not available.
r/Revised by 5 percent or more from previously published data. S Does not meet publication standards. X Not applicable.

1/Data are included in product code 33531210X2, 0X3.
2/Data are included in product code 33531230X4.
3/Industries 3353125 and 335312C are combined to avoid disclosing data for individual companies.

Note: Percent of estimation of each item is indicated as follows: a/10 to 25 percent of this item is estimated. b/26 to 50 percent of this item is estimated. c/Over 50 percent of this item is estimated.

Continued

Table 3. Quantity and Value of Total Shipments and Interplant Transfers of Motors and Generators and Quantity of Motors and Generators Produced and Incorporated Into Other Products at the Same Establishment: 2001 and 2000

[Quantity in number of units. Value in thousands of dollars]

Product code	Product description	Total shipments, including interplant transfers		Interplant transfers		Produced and incorporated (quantity)
		Quantity	Value	Quantity	Value	
	2001					
335312	Motors and generators:					
3353121	Fractional horsepower motors, excluding hermetics	227,403,951	3,723,007	24,650,073	309,589	39,220,942
3353123	Integral horsepower motors and generators, excluding hermetics	5,908,392	1,508,327	(D)	(D)	(D)
	Alternating current:					
3353123000	Polyphase, induction greater than 1 hp	2,778,178	251,027	(D)	(D)	(D)
3353125	Motors and generators for land transportation equipment 1/	(D)	(D)	(D)	(D)	(D)
3353127	Prime mover generator sets (except steam and hydraulic turbine)	(S)	2,968,688	(D)	(D)	(D)
3353129	Electric motor generator sets and other rotating equipment, including hermetics with power rating less than 746 watts 2/	(D)	(D)	(D)	(D)	(D)
335312A	Electric motor generator sets and other rotating equipment, including hermetics with a power rating of 746 watts or more 2/	(S)	968,414	5,900,518	66,044	551
335312C	Parts for motors and generators 1/	(X)	823,137	(X)	159,670	(X)
	2000					
335312	Motors and generators:					
3353121	Fractional horsepower motors, excluding hermetics	r/ 252,858,601	r/ 4,328,127	31,107,496	r/ 321,521	r/ 33,428,722
3353123	Integral horsepower motors and generators, excluding hermetics	6,479,957	1,695,732	(D)	(D)	(D)
	Alternating current:					
3353123000	Polyphase, induction greater than 1 hp	3,281,831	r/ 294,128	(D)	(D)	(D)
3353125	Motors and generators for land transportation equipment 1/	(D)	(D)	(D)	(D)	(D)
3353127	Prime mover generator sets (except steam and hydraulic turbine)	(S)	r/ 2,825,142	(D)	(D)	(D)
3353129	Electric motor generator sets and other rotating equipment, including hermetics with power rating less than 746 watts 2/	(D)	(D)	(D)	(D)	(D)
335312A	Electric motor generator sets and other rotating equipment, including hermetics with a power rating of 746 watts or more 2/	(S)	1,028,098	8,046,087	89,873	699
335312C	Parts for motors and generators 1/	(X)	r/ 784,378	(X)	r/ 142,819	(X)

D Withheld to avoid disclosing data for individual companies. r/Revised by 5 percent or more from previously published data. S Does not meet publication standards. X Not applicable.

1/Industries 3353125 and 335312C are combined to avoid disclosing data for individual companies.
2/Industries 3353129 and 335312A are combined to avoid disclosing data for individual companies.

Table 4. Shipments, Exports, Imports, and Apparent Consumption of Motors and Generators: 2001 and 2000
[Quantity in number of units. Value in thousands of dollars]

Product code	Product description	Manufacturers' shipments: Quantity	Manufacturers' shipments: Value f.o.b. plant	Exports of domestic merchandise 1/ (value at port)	Imports for consumption 2/ (value)
	2001				
3353121	Fractional horsepower motors and generators (except hermetics)	227,403,951	3,723,007	618,658	2,329,657
3353123	Integral horsepower motors and generators	5,908,392	1,508,327	852,335	1,680,611
3353125	Motors and generators for land transportation 3/	(D)	(D)	(D)	(D)
3353127	Prime mover generator sets, (except steam or hydraulic and electric motor driven):				
	Gas/gasoline driven 4/	(S)	2,968,688	127,832	192,950
	Diesel engine-driven:				
	Less than 400 kVA (3353127025, 028, 031,034 037) 5/	(D)	(D)	(D)	(D)
	400 kVA to less than 1,000 kVA (3353127041, 043, 046) 5/	(D)	(D)	(D)	(D)
	1,000 kVA and over (3353127049, 051) 5/	(D)	(D)	574,981	224,219
	Other (3353127065)	(D)	(D)	707,471	1,521,740
3353129, 12A	Electric motor-driven generator sets, hermetics, and other rotating equipment:				
	Synchronous converters, double current generators, and electric motor-driven generator sets (335312A003, 3353129003) 6/	(S)	27,125	(D)	(D)
	Hermetic motors (3353129011, 335312A011) 6/	(S)	697,590	(D)	(D)
	Other rotating equipment (3353129014, 335312A014 6/	(S)	243,699	14,776	5,644
335312C	Parts for all electric motors and generators (335312C001, C004, C007) 3/	(X)	823,137	1,199,471	1,115,881
	2000				
3353121	Fractional horsepower motors and generators (except hermetics)	r/ 252,858,601	r/ 4,328,127	677,730	2,555,134
3353123	Integral horsepower motors and generators	6,479,957	1,695,732	676,013	1,566,592
3353125	Motors and generators for land transportation 3/	(D)	(D)	(D)	(D)
3353127	Prime mover generator sets, (except steam or hydraulic and electric motor driven):				
	Gas/gasoline driven 4/	(S)	r/ 2,825,142	79,980	103,395
	Diesel engine-driven:				
	Less than 400 kVA (3353127025, 028, 031,034 037) 5/	(D)	(D)	(D)	(D)
	400 kVA to less than 1,000 kVA (3353127041, 043, 046) 5/	(D)	(D)	(D)	(D)
	1,000 kVA and over (3353127049, 051) 5/	(D)	(D)	464,869	196,190
	Other (3353127065)	(D)	(D)	143,241	388,296
3353129, 12A	Electric motor-driven generator sets, hermetics, and other rotating equipment:				
	Synchronous converters, double current generators, and electric motor-driven generator sets (335312A003, 3353129003) 6/	(S)	24,452	(D)	(D)
	Hermetic motors (3353129011, 335312A011) 6/	(S)	786,724	(D)	(D)
	Other rotating equipment (3353129014, 335312A014 6/	(S)	216,922	13,834	5,294
	Parts for all electric motors and generators (335312C001, C004, C007) 3/	(X)	r/ 784,378	1,068,110	1,037,058

D Withheld to avoid disclosing data for individual companies. r/Revised by 5 percent or more from previously published data.
S Does not meet publication standards. X Not applicable.

1/Source: Census Bureau report, EM 545, U.S. Exports.
2/Source: Census Bureau report, IM 145, U.S. Imports for Consumption.
3/"Motors and generators for land transportation" and "Parts for all electric motors and generators" are combined to avoid disclosing data for individual companies.
4/Exports and imports for "Gas/gasoline engine-driven, less than 5 kVA" and "Gas/gasoline engine-driven, 5 kVA and over" are combined to avoid disclosing data for individual companies.
5/Exports and imports for "Diesel engine-driven, less than 400 kVA," "Diesel engine-driven, 400 kVA to less than 1,000 kVA," and "1,000 kVA and over" are combined to avoid disclosing data for individual companies.

Table 5. Comparison of North American Industrial Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2001

Product code	Product description	Export code 1/		Import code 2/	
3353121	Fractional horsepower motors and generators	8501.10.3000	8501.10.4040	8501.10.2000	8501.10.4020
		8501.10.4060	8501.10.4080	8501.10.4040	8501.10.4060
		8501.10.6020	8501.10.6040	8501.10.4080	8501.10.6020
		8501.10.6060	8501.10.6080	8501.10.6040	8501.10.6060
		8501.20.2000	8501.20.3000	8501.10.6080	8501.20.2000
		8501.31.2000	8501.31.3000	8501.20.4000	8501.20.5000
		8501.31.8000	8501.40.2020	8501.31.2000	8501.31.4000
		8501.40.2040	8501.40.3020	8501.31.5000	8501.31.8000
		8501.40.3040	8501.51.2020	8501.40.2020	8501.40.2040
		8501.51.2040	8501.51.3020	8501.40.4020	8501.40.4040
		8501.51.3040		8501.40.5020	8501.40.5040
				8501.51.2020	8501.51.2040
				8501.51.4020	8501.51.4040
				8501.51.5020	8501.51.5040
3353123, 125	Integral horsepower motors and generators	8501.20.6000	8501.31.6000	8501.20.6000	8501.31.6000
		8501.32.2000	8501.32.4000	8501.32.2000	8501.32.4500
		8501.32.6000	8501.33.2000	8501.32.5520	8501.32.5540
		8501.33.3000	8501.33.4040	8501.32.6000	8501.33.2040
		8501.33.4060	8501.33.6000	8501.33.2080	8501.33.3000
		8501.34.3000	8501.34.6000	8501.33.4040	8501.33.4060
		8501.40.6020	8501.40.6040	8501.33.6000	8501.34.3000
		8501.51.6020	8501.51.6040	8501.34.6000	8501.40.6020
		8501.52.4000	8501.52.8000	8501.40.6040	8501.51.6020
		8501.53.4000	8501.53.6000	8501.51.6040	8501.52.4000
		8501.53.8040	8501.53.8060	8501.52.8020	8501.52.8040
		8501.61.0000	8501.62.0000	8501.53.4040	8501.53.4080
		8501.63.0000	8501.64.0020	8501.53.6000	8501.53.8040
		8501.64.0030	8501.64.0050	8501.53.8060	8501.61.0000
				8501.62.0000	8501.63.0000
				8501.64.0020	8501.64.0030
				8501.64.0050	
3353127003, 007, 011, 013, 017	Gas/gasoline engine-driven	8502.20.0040	8502.20.0080	8502.20.0030	8502.20.0060
				8502.20.0080	
3353127025, 028 028, 031, 034, 037, 041, 043, 046, 049, 051	Diesel engine-driven generator sets	8502.11.0000	8502.12.0000	8502.11.0000	8502.12.0000
		8502.13.0020	8502.13.0040	8502.13.0020	8502.13.0040
3353127065	Other generator sets	8502.31.0000	8502.39.0000	8502.31.0000	8502.39.0000
3353129, 12A	Electric motor-driven generator sets and other rotating equipment	8502.40.0000		8502.40.0000	
335312C001	Parts for motors and generators, including commutators	8503.00.2000		8503.00.2000	
335312C004, 007	Parts for motors and generators, excluding commutators	8503.00.5000	8503.00.6040	8503.00.3500	8503.00.4500
		8503.00.6060		8503.00.6500	8503.00.7500
				8503.00.9000	8503.00.9520
				8503.00.9545	8503.00.9560

1/Source: 2001 edition, Harmonized System-Based Schedule B, Statistical Classification of Domestic and Foreign Commodities Exported from the United States.

2/Source: Harmonized Tariff Schedule of the United States, Annotated (2001).

Appendix.
General CIR Survey Information, Explanation of General Terms and Historical Note

GENERAL

The CIR program has been providing monthly, quarterly, and annual measures of industrial activity for many years. Since 1904, with its cotton and fats and oils surveys, the CIR program has formed an essential part of an integrated statistical system involving the quinquennial economic census, manufacturing sector, and the annual survey of manufactures. The CIR surveys, however, provide current statistics at a more detailed product level than either of the other two statistical programs.

The primary objective of the CIR program is to produce timely, accurate data on production and shipments of selected products. The data are used to satisfy economic policy needs and for market analysis, forecasting, and decision making in the private sector. The product-level data generated by these surveys are used extensively by individual firms, trade associations, and market analysts in planning or recommending marketing and legislative strategies, particularly if their industry is significantly affected by foreign trade. Although production and shipments information are the two most common data items collected, the CIR program collects other measures also such as inventories, orders, and consumption. These surveys measure manufacturing activity in important commodity areas such as textiles and apparel, chemicals, primary metals, computer and electronic components, industrial equipment, aerospace equipment, and consumer goods.

The CIR program uses a unified data collection, processing, and publication system. The U.S. Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic census, manufacturing sector. The manufacturing sector provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is too large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. The CIR program includes a group of mandatory and voluntary surveys. Typically the monthly and quarterly surveys are conducted on a voluntary basis. Those companies that choose not to respond to the voluntary surveys are required to submit a mandatory annual counterpart corresponding to the more frequent survey.

NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS), 1997

The adoption of the North American Industry Classification System (NAICS) in the 1997 Economic Census has had a major impact on the comparability of current and historic data. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those that left manufacturing are logging and portions of publishing. Prominent among the industries that came into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. The net effect of the classification changes are such that if the 1997 value of shipments data for all manufacturers were tabulated on an SIC basis, it would be approximately 3 percent higher.

Listed below are the NAICS sectors:

21 Mining
22 Utilities
23 Construction
31-33 Manufacturing
42 Wholesale Trade
44-45 Retail Trade
48-49 Transportation and Warehousing
51 Information
52 Finance and Insurance
53 Real Estate and Rental and Leasing
54 Professional, Scientific, and Technical Services
55 Management of Companies and Enterprises
56 Administrative and Support and Waste Management and Remediation Services
61 Educational Services
62 Health Care and Social Assistance
71 Arts, Entertainment, and Recreation
72 Accommodation and Food Services
81 Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

FUNDING

The Census Bureau funds most of the surveys. However, a number of surveys are paid for either fully or partially by other Federal Government agencies or private trade associations. A few surveys are mandated, but all are authorized by Title 13 of the United States Code.

RELIABILITY OF DATA

Survey error may result from several sources including the inability to obtain information about all cases in the survey, response errors, definitional difficulties, differences in the interpretation of questions, mistakes in recording or coding the reported data, and other errors of collection, response, coverage, and estimation. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to these nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is the imputing of data for nonrespondents, for late reporters, and for data that fail logic edits. Missing figures are imputed based on period-to-period movements shown by reporting firms. A figure is considered to be an impute if the value was not directly reported on the questionnaire, directly derived from other reported items, directly available from supplemental sources, or obtained from the respondent during the analytical review phase. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are suppressed or footnoted. The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual yearly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is assumed to be small. The degree of uncertainty regarding the accuracy of the published data increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

DATA REVISIONS

Statistics for previous years may be revised as the result of corrected figures from respondents, late reports for which imputations were originally made, or other corrections. Data that have been revised by more than 5 percent from previously published data are indicated by footnotes.

DISCLOSURE

The Census Bureau collects the CIR data under the authority of Title 13, United States Code, which specifies that the information can only be used for statistical purposes and cannot be published or released in any manner that would identify a person, household, or establishment. "D" indicates that data in the cell have been suppressed to avoid disclosure of information pertaining to individual companies.

EXPLANATION OF GENERAL TERMS

Capacity. The maximum quantity of a product that can be produced in a plant in 1 day if operating for 24 hours. Includes the capacity of idle plants until the plant is reported to be destroyed, dismantled, or abandoned.

Consumption. Materials used in producing or processing a product or otherwise removing the product from the inventory.

Exports. Includes all types of products shipped to foreign countries, or to agents or exporters for reshipment to foreign countries.

Gross shipments. The quantity or value of physical shipments from domestic establishments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale or use. Shipments of products purchased for resale are omitted. Shipments of products made under toll arrangements are included.

Interplant transfers. Shipments to other domestic plants within a company for further assembly, fabrication, or manufacture.

Inventories. The quantity or value of finished goods, work in progress, and materials on hand.

Machinery in place. The number of machines of a particular type in place as of a particular date whether the machinery was used for production, prototype, or sampling, or was idle. Machinery in place includes all machinery set up in operating positions.

Net receipts. Derived by subtracting the materials held at the end of the previous month from the sum of materials used during the current month.

Production. The total volume of products produced, including: products sold; products transferred or added to inventory after adjustments for breakage, shrinkage, and obsolescence, plus any other inventory adjustment; and products that undergo further manufacture at the same establishment.

Quantities produced and consumed. Quantities of each type of product produced by a company for internal consumption within that same company.

Quantity and value of new orders. The sales value of orders received during the current reporting period for products and services to be delivered immediately or at some future date. Also represents the net sales value of contract change documents that increase or decrease the sales value of the orders to which they are related, when the parties concerned are in substantial agreement as to the amount involved. Included as orders are only those that are supported by binding legal documents such as signed contracts or letter contracts.

Quantity and value of shipments. The figures on quantity and value of shipments represent physical shipments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and returns. Shipments to a company's own branches are assigned the same value as comparable appropriate allocation of company overhead and profit. Products bought and resold without further manufacture are excluded.

Stocks. Total quantity of ending finished inventory.

Unfilled orders (backlog). Calculated by adding net new orders and subtracting net sales from the backlog at the end of the preceding year.

HISTORICAL NOTE

Data on motors and generators have been collected by the Census Bureau since 1960. Historical data may be obtained from Current Industrial Reports available at your local Federal Depository Library.